

The Pileup

Newsletter of the CDXA

The Mysterious “Sidetone” and its Relationship to Zero Beat

Art Tolda, W1AJT/VE3UTT *

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Back in the olden days, when most of us used separate transmitters and receivers, we had to "spot" the transmitter before calling another station. Spotting simply turned on your transmitter at very low power, so you could hear it in your receiver. On CW, you simply tuned your transmitter to match the pitch of the station you wanted to call. Needless to say, that technique took some time to learn and execute.

It took a while for transceiver manufactures to make them transmit CW on the right frequency. Modern transceivers have a "tracking sidetone". If you tune the transceiver so the audio pitch of the other station matches your sidetone, you will be on the same frequency. There usually is a "Spot" or "Tune" button, which lets you hear your sidetone without transmitting. If you have any sort of ear for pitch (I don't), you may remember the sidetone pitch from your last transmission. Some transceivers also have a CW tuning indicator.

When listening to your sidetone and a CW signal, you will actually hear them beating against each other when you get close, producing a slow vari-

ation in volume. When the rate of that variation is zero, you are "zero beat". In practice, you usually don't have time for that, and matching the pitch is much quicker. You usually want to be within 20 Hz or so, though sometimes you might want to deliberately be off by 50 Hz or so, so you're not calling on exactly the same frequency as everyone else who clicked on that rare DX spot.

When you set your transceiver to CW mode the transceiver automatically “offsets” the frequency of its beat frequency oscillator (BFO) from the actual dial frequency you will transmit on by the frequency you set as your sidetone. When you press your “spot” or “tune” button on the transceiver you hear a tone that represents the difference of the dial frequency versus the BFO frequency. If you match the tone of the incoming signal to the sidetone by turning the dial the outgoing signal’s frequency will be equal to the incoming signal’s frequency. Then the other station will hear you exactly on their frequency irrespective of their own sidetone setting. For nearly all currently in-use equipment, it's pretty simple. The sidetone is generated at the pitch you choose. How this happens is a function of all the DSP firmware in today's radios, but that doesn't matter. If you are “zero beat”, you are transmitting on your dial frequency. All the rest is hocus pocus.

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CDXA PacketCluster & Other Communication Systems

K4MD (AR V.4 Cluster via Telnet)	k4md.no-ip.com:23
K4MD (AR V.6 Cluster via Telnet)	k4md.no-ip.com:7373
W4DXA (AR V.6 Cluster via Telnet)	w4dxa.no-ip.com:23
W3GQ (CC Cluster via Telnet)	w3gq.no-ip.com:7373
CDXA Repeater 147.18 MHz (+600)	W4DXA, Near Fort Mill, SC
World Wide Web Homepage	www.cdxa.org
Wednesday Luncheon (11:30 AM)	Skyland Family Restaurant, 4544 South Boulevard, Charlotte, NC

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The selectivity improves as the tone gets lower. By selectivity, I mean that your ear can more easily differentiate between two tones when your target tone is lower in frequency. If you're listening to two competing CW signals, and your zero beat signal is 400 Hz and the competing signal is 40 Hz away at 440 Hz, the difference between the two tones is 10%. If your zero beat signal is 800 Hz and the competing signal is the same 40 Hz away at 840 Hz, the difference is only 5% and it's harder to differentiate between the two signals (your ears can detect a 10% difference more easily than a 5% difference).

A lower sidetone pitch also means the band noise sounds lower in pitch, and I find that less fatiguing than high-pitched noise. For that reason I've always used a tone toward the lower end of things (~450 Hz give or take). I prefer that to high tones (> 600 Hz) though some people I know swear by the higher tones. If you suffer from partial hearing loss such that you can no longer hear low frequency sounds as well as you used to, you might be better able to hear a higher frequency tone. If your hearing loss affects high frequencies more than low frequencies, you might find lower frequency tones sound louder and are easier to hear. Everyone's hearing is different, and that is why most modern transceivers offer an adjustable sidetone.

Zero beat is a mixed bag. In the olden days, even if all the callers initially got exactly zero beat, by the time they began calling it all would have drifted a bit. Today, our signals are sterile and stable; they don't drift, they don't chirp, keyers send perfectly formed Morse, and they all sound the same. If you call CQ, most will reply zero beat ... they matched the pitch of your tone to their sidetone [or much more likely, their radio did it for them]. You won't be able to pick out any except by

waiting [and sometimes waiting more], and finally a lone signal will drop a call in a short silent period between everyone else. Being able to do that is also a cool skill to develop.

But, as a caller ... move just a little off, up or down, maybe 50-100 Hz, use your ears not the dial, and you will be the lone wolf. He'll hear you, get at least part of your call, and you get the Q.

{Here, as an aside, is a sort of brief music lesson for illustration:

If you look at a piano, the number of Hertz between each note on the piano continuously increases as you move from left to right on the piano keyboard. This means if you were to filter those pitches through a 500 Hz filter, the number of different notes that you could fit in the filter's passband would get smaller as you set the passband's center frequency higher. Whereas two notes that are a "half step" apart (musical term) are easy to tell apart for most people wherever they fall on the piano's keyboard. If you've ever listened to a piano tuner doing their job, you get a very front-row kind of seat for how this really sounds.

If I set my sidetone at 360 Hz when using my filter set at 300 Hz wide, I can hear stations calling from 210 to 510 Hz. This is 15 different half steps apart before they get too low for the filter or too high for the filter.

If I set the sidetone to 550 Hz, I would only be able to hear 10 different half steps from 400 Hz to 700 Hz (all other things being equal, with symmetrical rolloff, etc, of course we all know what it sounds like when you hear a station calling just outside the passband, and I don't want to split hairs).

With a sidetone of 730 Hz, I would only be able to hear from 580 Hz to 880 Hz or 8 different half steps.

Frequencies for equal-tempered scale: <https://pages.mtu.edu/~suits/notefreqs.html> }

Special thanks to Rich – VE3KI and the CWops group discussion for providing much material for this article

NOTE: If you have a desire to torture yourself further with this topic I also wrote a longer version with a couple of technical diagrams. Email me if you would like to read it.

Here are some good research articles:

<https://www.researchgate.net/scientific-contributions/2064408992-Sten-Harris> - The article in question is titled "Recognition of Telegraphy Signs at

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The Pileup

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The purpose of the Association is to secure for the members the pleasures and benefits of associating with persons having a common interest in Amateur Radio.

Members of the CDXA shall adhere to "The Amateur's Code" as published from time to time in *The ARRL Handbook for Radio Amateurs*, and shall consist of those valid licensed amateur operators having an interest in promoting amateur radio. Long distance communications (DX) is of special interest to members of the Association, but said interest is not a requirement of membership.

Yearly dues are \$25.00. A second licensed Amateur family member living in the same household can join for \$5.00 for a total family price of \$30.00 per year. The total price for 3 or more licensed family members living in the same household is only \$35.00 per year. All family members enjoy full member status. Dues are payable annually in December by check to the Secretary/Treasurer:

Ray Weeks, N4APR
3017 Cutchin Drive
Charlotte, NC 28210

Address, telephone, and email address changes should be directed to the Secretary/Treasurer at the above address or via email at: rweeks1@carolina.rr.com.

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Different Listening Levels and Frequencies" but his other works may be of interest too.

<https://www.amateurradio.com/studies-on-morse-code-recognition/> - Article discussing various studies in the 90s.

<http://elecraft.365791.n2.nabble.com/CW-Pitch-Resolution-td7579837.html> - 2013 discussion of the topic on the Elecraft mail list.

<http://jakemandell.com/adaptivpitch/> - Adaptive pitch test referenced in that Elecraft discussion. I scored 0.6 Hz differentiation. ☺

<https://apps.dtic.mil/dtic/tr/fulltext/u2/a305780.pdf> - A thesis by Jesse Washburn, 2nd Lt, USAF titled "Improving the Morse Intercept Operator's Audio Display" that cites Harris' work.

Finally here is the usual good David Casler video on the subject: <https://youtube.com/When you set your transceiver to CW mode the e/CrC7JmNw1eY>

DXpeditions WILL resume, someday!

The pandemic has hit the DX aspects of amateur radio pretty hard in 2020. A gut feel is that at least a dozen DXpeditions to somewhat rare DXCC entities have been postponed and dozens of other DXpeditions to other locales of interest have been postponed or cancelled.

Yet, the sun has already shown us a few sunspots that have been identified as belonging to Cycle 25. Sun watchers tell us the rise on the front end of the cycle is usually quite steep, so the prospect of significantly improved propagation by next year is good. Along with better propagation and getting the current pandemic under control, there is bound to be an uptick in DXpedition activity.

When that happens, our Association likes to lend financial assistance for well-founded DXpeditions to rare and semi-rare DXCC entities when asked by organizers. CDXA's mechanism for providing that support is the Carolina DX Foundation or CDXF. The Foundation is a recognized 501(c)(3) entity under IRS rules and contributions to it are tax deductible to the extent that an individual's personal tax situation permits a deduction.

As the end of year approaches, please give some thought to making a donation to the CDXF in support of DXpeditions that are sure to begin reappearing in numbers again in 2021 and beyond. Want to know more, go here <https://www.cdxa.org/cdxp.php>.

The Best Laid Plans

By Bill Fisher, W4GRW

For the ARRL September VHF contest Wayne N4HWH was going to operate in the Single operator, Portable/QRP class, and Bill W4GRW was going to assist with the setup and do logging for Wayne during the contest. This was to be Wayne's rodeo. Originally we planned to go to Mt Mitchell, but were told that our plan to use drive-over antenna mounts was taboo--only 4 tires permitted on the parking lot-- and if we were using tall antennas, we had to submit a site plan for approval to the park superintendent in advance. Hello, Roan Mountain!, There we found no restrictions other than to be off the Mountain at closing, so no overnight operating.

PLANNING AND PREPARATIONS

Going into the contest weekend, we knew it was going to be a wet one. There was a 50-60 % of rain and thunderstorms for Saturday, but we decided to go anyway. Wayne had a car with a hatchback so our rain plan was to put a big tarp over the rear door and operate under the tarp on a table setup on his tailgate. Power was to be provided by two large 12VDC car batteries.

On Wednesday, we did a trial run on the rooftop parking lot of Lowes in South End. The plan was to work SSB & FM on 4 bands--6m, 2m, 222MHz and 432MHz. We had a nice large Comet base antenna for 2m, 222MHz & 440MHz/FM and SSB loops for 6m, 2m, 222 & 432. Thanks help from Paul AD4IE, we were able to do some on the air testing.

CONTEST DAY

Arrived atop Roan Mountain @ 11:30AM, ahead of our Noon planned arrival, to an overcast day with light drizzle. Got the two drive-over antennas set up. With the hatch of the car open, we set up the tarp to keep us dry. Then, onto setting up the FM and SSB loop antennas. Next, up went the operating table, rigs, and laptop computer (no FT8 because believe it or not, there are no any cell signals on top of Roan Mountain (no Verizon, ATT or T Mobile)—it's now 1:15PM. We had four antenna switches, so we had to cable up and battery wiring for the radio and batter wiring to run the laptop using an inverter. **OOPS #1.** The car battery we had planned to use for the laptop didn't like the inverter. So, wired the inverter to the actual car battery.

A huge downpour forced us under the tarp, so we used that time to finish all the cabling, foot switches, headsets, etc., on now soaking wet ground. **OOPS #2** ..It's now 1:57PM--what was that, the rumble of thunder in the distance? Got on the air, calling CQ on 144.205 for a while, but there were no takers. Thank goodness for

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the TS2000's built in voice keyer. A switch to 2M FM had nice success. Oh-oh, the rumble of thunder was getting closer, and the rain hitting the tarp was so loud we couldn't hear well. Thank goodness for the headphones. Back to SSB and now we had static crashes and rain static. Back to FM simplex for a few more contacts then the thunderstorm was almost directly overhead. Quick, unplug everything and jump in the car. **OOPS #3** Once in the car, Wayne tries to start it and NADA, turns out with the hatchback open the interior lights never turn off for his model of car (confirmed this on the internet when we got home). The laptop and inverter must have also drawn more current than we had anticipated. Shut the hatchback in the middle of the storm, hoping and praying the battery would somehow work.

No Joy.

OK, so let's review our situation: , we are on a mountaintop in rural Tennessee in what has now turned into a three hour thunderstorm with torrential rains and with a dead battery. Did I mention no cell phone coverage? Even if available to call for a jump start, it would probably cost close to \$150 to get someone to come out in storm, and drive to a mountaintop to jump start two wet ham rats stranded on a 6500 foot mountaintop. Can you say.HELP...MOMMY...!!!

Inevitably, "Nature" called and Wayne had to go visit a tree in the pouring rain. Wait! He saw a car leaving the park. He ran out and probably scared the crap out of the driver but he did manage to flag him down and asked for a jumpstart. For some reason the driver agreed and we were able to get the car cranked up.

GOING HOME

We experienced rainy, foggy conditions as we finally drove off Roan Mountain. But, remember all those wet tarps and wet hams? Well those things helped keep the INSIDE of our car windows fogged up too! It rained for the next few hours, and as we descended all the creeks and streams were almost cresting--I guess EVERYTHING really does go downhill!

OOPS #4 Panic! We need gas. Will the car restart? We left the car running, gassed up, and thankfully, headed home. We stopped at an Auto Zone on the way home so they could test the battery. Did I mention the battery was in the back of the car down where the spare tire was? What about all that wet gear in the back of the car on top of the battery compartment? The woman who came out to test the battery said she needed access to the battery. We made a brave move and cut off the ignition switch. Yippee, it restarted. Whew!! Now headed homeward.

About that potential \$150 tow truck charge we avoided...those steaks at Outback sure tasted amazing, and I

guess we ended up the day wet, and tired but \$100 ahead of the game. Chilly day on a 6500 foot mountaintop in a thunderstorm with torrential rain, calling CQ

...PRICELESS!

Dues Structure for 2021

Because of reduced CDXA club activities resulting from the Covid-19 pandemic, the expenses to run Carolina DX Association have been diminished. In recognizing that CDXA is not providing some benefits formerly provided under normal operations, nor are members receiving those benefits, Club Leadership has decided to reduce the dues for membership for renewal for individuals, renewals for individuals and spouse, and renewals for a family membership to an amount of \$10.00 for all three of these categories. **New** membership applications in 2021 will continue to be assessed at the *current* rates for the respective class of membership now in place.

Leadership has expectations that the club will be able to return to a full operational status for 2022, at which time dues will be reinstated to current levels. Current services such as cluster operation, contest awards, and newsletter will continue during 2021 as usual.

Ray Weeks, N4APR
Secretary and Treasurer
The Carolina DX Association

Welcome New Members

Two new members found us despite the absence of our weekly luncheon and the continuing lull in propagation caused by a dying Cycle 24 of our Sun's 11 year cycle. So, hat's off to **John Birken, K2SFS**, of Asheville, NC and **Fred Roberts, WB4QOC** of Kannapolis, NC for seeking us out. Welcome, John and Fred!

Pun Pfun

So what if I don't know what apocalypse means? It's not the end of the world!

To the guy who invented zero, thanks for nothing.

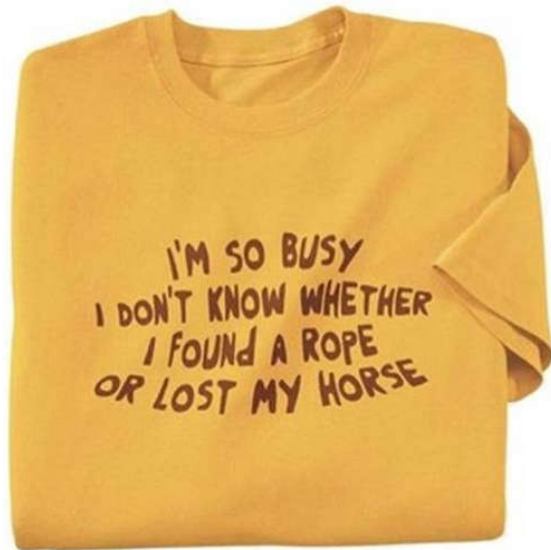
Don't trust stairs because they're always up to something.

What do you call a teapot of boiling water on top of mount Everest?

Answer on Page 5

One Path Leads to Another

By John Scott, K8YC



In earlier editions of The Pileup, I suggested a few projects that might keep us busy as we weather through this Covid-19 Pandemic. Now, it wouldn't be very good if the "Doctor gives you advice", but doesn't follow it himself! Some of the activities I mentioned have been on my "todo" list for quite a while. So, I decided to embark on a few of them

One of the items I had on the list was to read a good book. I've read three, started a fourth, and have a juicy Brad Thor novel just waiting for the near future. Speaking of books, that leads me to another kind of book. Recently, Ken Cannaday (W4NZC) came along with one of the problems given him by the professor in one of a series of courses he's been taking at MIT over the past few years. The problem involved setting up the differential equations of a rotating combination of pulleys with ropes attached to the pulleys that activated a spring to store potential energy, a mass to store energy in elevating it, and a dashpot to act as a dissipater of all the dynamic energies. (It was a very fancy form of an RLC circuit, but had some neat wrinkles because of a linear mass movement being part of a rotating system. Yeah, that's all you probably want to know!!) Not to look stupid to Ken, I had to dig back through my old differential equations text book which I last used in about 1961! Needless to say, I'm not as up to speed now as I was in 1961, but it was a joy to dust off some old skills. So, to all of you, maybe you'd get some satisfaction from brushing up on some of those old subjects you once mastered.

The amateur radio club at my alma mater invited me to

attend a "Zoom" meeting at which one of the members provided an introduction to the nanoVNA, a "poor man's version" of the Rig Expert Vector Network Analyzer. The cost was a very reasonable \$40 or so. I bought one, and it works nicely, if not quite as conveniently as its Rig Expert big brother. Check it out. It produces charts on its screen of up to four attributes which your friendly MFJ 259B can't dream of doing. The nanoVNA provides displays of your antenna characteristics—SWR, Phase angle, and reactance as a function of frequency on the band of interest. It also produces a Smith Chart.

Now the Smith Chart is something from my past that I never took the time to master. So, I went digging into my old college text books and found my text on "Traveling Wave Engineering" which contains all you wanted to know about transmission lines, waveguides and their equations. I went searching for it because I knew it had a chapter on Smith Charts, and I wanted to go deeper into the subject. That whetted my appetite, but fully satisfying it will have to wait for a time when I am well rested and have a quiet setting to wade through the entire discussion on the topic. There is so much to do, and seemingly little time to do it.

So, how about picking up some computer skills? My grandson is a computer science student in his junior year at University of Illinois-Chicago. Every once in a while we chat about what he's doing. I asked his advice on what language I should spend some time learning. He suggested Python and then filled me in on GitHub as an Internet place which is a repository of thousands of code snippets to do all sorts of things. I found a nice free "development environment" for Python called THON-NY that walks one through all sorts of basic skills to learn the language. I loaded the free environment to my computer and spent several days becoming aware of Python and even writing a few simple programs. I even developed a small program to compute permutations and combinations of "n" things taken "k" at a time so I could compute my odds of winning at Power Ball. (After computing the number of ways those lottery balls can fall, I decided to save my money!!)

Wow, did you attend QSO Today—Virtual Ham Expo 2020? That was an interesting way to attend a hamfest. If you could not attend a session because of a conflict with another preferred session, you could watch it later

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Pun Phun Answer

A high-pot-in-use.

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that weekend. How many hamfest forums have you missed because it was at the same time as another forum that you also wanted to attend? The videos for the most part from QSO Today are available on YouTube in case you didn't have time on the weekend itself. Five topics I found interesting, and therefore saved links to the YouTube presentation were:

Solo Contesting <https://www.youtube.com/watch?v=zKl0Mi1N3e0>

Backpacking Antennas https://www.youtube.com/watch?v=tnx_DXFHNcU

Elecraft K4 Feature Rundown <https://www.youtube.com/watch?v=KPw5SL6woR8>

Hollow State Electronics (Vacuum Tubes) <https://www.youtube.com/watch?v=aKveYmjYKXo>

All about USB Adapters (good stuff for hams) <https://www.youtube.com/watch?v=9MJfCKH7AdQ>

Arduino Microprocessor Overview <https://www.youtube.com/watch?v=Izm7hqyM8Io>

I've looked at four of these. I didn't yet get to the fifth, because the Arduino presentation took me down another path. People are doing some remarkable things with these little microcontrollers. A ham in India developed a radio kit selling for about \$100 that covers all ham bands. It is called the uBITX HF Transceiver. <https://www.youtube.com/watch?v=l33S1ERz-tg>.

For a creative effort developed a little closer to home, CDXA's own Tom Lewis, N4TL produced a neat little CW Trainer using an Arduino Microcontroller and told the world about it in QST. (See: [http://www.arrl.org/files/file/QST/This Month in QST/September2016/Lewis PROMO.pdf](http://www.arrl.org/files/file/QST/This%20Month%20in%20QST/September2016/Lewis%20PROMO.pdf).)

While listening to the Arduino presentation done by Glen Popiel, KW5GP, my thoughts turned to a broken speed meter on my Nordic Track exercise machine. It was a simple device that used a magnet on a spinning shaft to compute speed by measuring reed switch closures of the turning shaft, but to replace it would cost about \$160! Glen made such a compelling case for what one can do with an Arduino, I figured I could build my speedometer for far less and learn something about Arduino in the process. For the programming, I found the free Arduino Integrated Development Environment (IDE) online and downloaded it. Companies like Adafruit and Elegoo have well suited "starter kits" which

include an Arduino microcontroller, power hookups, resistors, LED's, small stepper motors, buzzers, small motors, a small breadboard, a number of pluggable jumpers for the breadboard, and much more. The Elegoo Starter kit available from Amazon costs about \$40, and it was in my house on Sunday of Labor Day weekend after ordering it on Saturday!! With the IDE already downloaded, I was ready to go.

Five days later I had a prototype working for my Nordic Track. On a neat little two line LCD, it provides the following from my Nordic Track: RPM of the shaft, Miles per hour of the skiing activity, elapsed time of the session, and the accumulated mileage for the exercise session. All I need now is to go to one of the many purveyors of Arduino products (eBay helps as does a Google search) to find a nice little case to contain my new "high tech" speedometer.

I've had a few email communications with Glen Popiel. He tells me that he'll have a review of the DrDuino "Pioneer" board in the November issue of QST. Then, it is likely the DrDuino "Explorer" board will be reviewed in the December QST. If you just can't wait for the November QST, Glen will be doing a presentation on the ARRL's Learning Network webinar at 8PM Eastern Time on Thursday, October 15 which will also have a live Q&A session at the end of the presentation. So, maybe I'll "see" you there! Glen has also written two ARRL books on Arduino projects related to amateur radio.

What path will this "random walk" take me on next? Well, maybe a Raspberry Pi!!! That's another product with which you can get a good start at waking a few neurons in your head for not too much money. Who knows, if the propagation improves, there's also amateur radio!!

Did you ever Wonder?



WWROF Announces New Director, Philipp Springer, DK6SP as Long-Time Director, Dennis Motschenbacher, K7BV Steps Down

Fredricksburg, TX—August 21, 2020

The World Wide Radio Operators Foundation, Inc. (WWROF) is pleased to announce the election of Philipp Springer, DK6SP, to its board of directors, effective immediately. WWROF Chairman Tim Duffy, K3LR, says, “We’re excited to welcome Philipp to our leadership team, in particular for his enthusiasm for radio sport and highly respected representation of the youth in our hobby.”

Philipp, who is 22 years old, began his ham radio career in early 2008 at the young age of ten, ultimately being issued the novice call sign, DO6PS. In 2013 he upgraded to a full operating license and was granted the call sign DK6SP, which he has held ever since. Philipp is a member of the IARU Region 1 Youth Working Group and the German amateur radio society DARC, where he is also responsible for leading activities for Youngsters-on-the-Air (YOTA)--Team Germany program. In addition, he is also a member of AGCW-DL, SKCC, CWOPS and the Bavarian Contest Club. Philipp proudly participated at WRTC 2018 in Germany as Team Y82D, together with youth team member HA8RT, achieving a respectable 23rd place finish amongst 63 teams staffed by the best contest operators in the world. Most recently, Philipp gained his bachelor’s degree in Business Administration with emphasis on logistics management and plans to progress as a master’s student.

In addition, **WWROF is announcing the retirement of Dennis Motschenbacher, K7BV from its board of directors.** “On behalf of the WWROF board, we want to thank Dennis for his invaluable contributions to our activities and unique industry insight,” said Tim Duffy, K3LR. Dennis continues to be a dedicated operator on the HF and VHF bands and looks forward to being even more active.

About WWROF

The World Wide Radio Operators Foundation is a non-profit, donor-supported organization dedicated to improving the skills of amateur radio operators around the world, utilizing education, competition, advancement of technology and scientific research, promoting international friendship and goodwill, and preparing them to better serve society in times of communications communications needs. In addition, WWROF provides major assistance, including the infrastructure for log submissions, log checking, reporting, and other support services for many popular radio contests. For more information, log on to: <https://wwrof.org/>.

CDXA Zooms into your home!!

Hey, folks, we’ve missed a number of you at the three informative ZOOM sessions CDXA has produced this past summer. The old adage of the optimist is, “If life gives you lemons, make lemonade!” With Covid-19 causing a stoppage of our informal luncheons as well as the Charlotte Hamfest and our Fall Barbeque, surely we’ve been handed some lemons. Our “lemonade” was some Zoom videoconferences for all the members who wished to attend. In our first presentation of the summer, we had Jay Slough give us a rundown of the preparation for the Sable Island DXpedition—CY0C. Unfortunately, that effort has been postponed by—you guessed it, Covid-19—but Jay’s presentation was still informative, and the DXpedition will hopefully come off in the fall of 2021.

Our second venture into “Zooming” provided us a presentation of the South Orkney DXpedition, VP8PJ by team member Ken Karr, NG2H. There were lots of good photos.

Finally, CDXA’s own Gary Dixon, K4MQG, provided two very interesting humanitarian activities which involved aspects of amateur radio that he performed in the course of his long amateur radio career.

All three of these CDXA Zoom sessions have been recorded and are available to be viewed on the CDXA website by selecting the “Videos” button and selecting “CDXA Videos” from the submenu. (https://www.cdxa.org/cdxa_videos.php).

Just so you know, you can attend these sessions as an “audio only”, dial-in participant if you don’t have a camera on your PC. Also, you can even attend to watch the video portion without having a camera or a microphone. Without a microphone, you’ll be unable to speak, but you can still enjoy the show. So, don’t stand on the sidelines. C’mon in for the fun!

K1USN’s New Weekly Slow Speed Test

(If you’re interested in improving your CW skills, or want to help others improve their skills, here’s your cup of tea. Thanks to Bernie McClenny of THE DAILY DX for forwarding this to the amateur radio community. –The Editor)

The CWops Club (CWops) promotes the art of CW for those who wish to expand and improve their on-the-air experiences. CWops’ CW Academy (CWA) program has produced thousands of successful graduates who have gone on to become everyday CW operators. Hundreds of CWA grads have be-

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come CWops members after demonstrating their ability to understand and communicate in CW at speeds of 25 WPM and higher!

CWops' three weekly 25 to 40+ WPM CWT sprints are exciting, stimulating and a great way to improve CW copying ability, operating skills, and propagation knowledge. The CWTs create bonds of friendship among CW-loving operators around the world.

Now, for those just getting started in CW contesting and others who prefer a more leisurely pace, several members of both the K1USN Radio Club and CWops are starting a weekly one-hour slow speed CW contest, the SST. **Please join us!**

K1USN's new Slow Speed Test is designed to encourage and assist those who signed up for CWA to learn CW or to improve their CW skills but are not yet copying 25 WPM, as well as all others who feel like "taking it slow and easy" once per week both for their own pleasure and to help others out.

CWops currently offers a total of nine "slow speed" CWT's per year just after the three CWA graduations where all are asked to slow down to 20 WPM. Many CWA grads make contacts in those sessions, enjoying a well-earned rush of accomplishment. The SST will expand those opportunities for success to 52 weeks per year!

All of us old enough to remember our Novice days recall the rush of adrenalin and the sweaty grip on our J-38 (or Radio Shack) keys during those very first CW QSOs. This is what it must feel like for the new CW operators we want to encourage.

The weekly slow speed SST is also for operators who currently participate in regular CWT sessions, but only as S & P (Search and Pounce) entrants. The weekly 20 WPM or slower SSTs can build their confidence to find open frequencies and begin calling CQ, first in the SSTs and then in the more crowded and frenetic full speed CWTs. Successfully crossing that CQing threshold is another real accomplishment!

We hope many SST participants become sufficiently comfortable with CW contesting to enjoy the regular higher speed CWT sessions, other big CW contests, and smaller local and regional QSO parties, using N1MM+ (or other) computer loggers, spotting networks, call history files, live

online scoring, etc. We welcome everybody to join in the SSTs whether high speed CW contesting is your goal or not, including new ops making their first attempts at completing a CW QSO.

In addition to SST's 20 WPM upper speed limit, we ask all to be patient, supportive, and willing to slow down further as necessary to assist another op in completing an SST QSO.

CWA recommends using electronic keyers and paddles, but if you are more comfortable with some other device, please feel free to join us in the SSTs using a straight key, cootie key, bug or paddles. Unlike high speed contests, where QSO rate is king and a CQing/"running" station expects only the required exchange and confirms a contact with simply "dit" or "R", the SST encourages sending brief friendly greetings to the other Op.

Friendliness is part of taking it slow and easy! So please join us in the SSTs! All you need is an HF radio, an antenna, and the desire to become, and assist others to become, better CW operators!

Time and Day: 0000 UTC Monday (Sunday 8 PM EDT)

Suggested initial SST frequencies:

80 meters 3.532 - 3.539

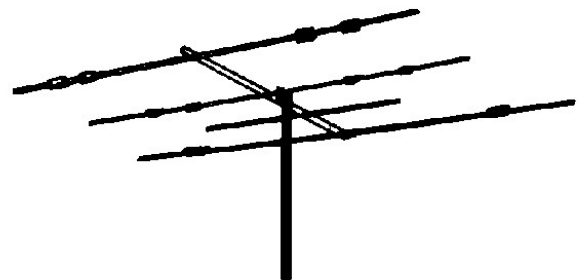
40 meters 7.032 - 7.039

20 meters 14.032 - 14.039

Exchange: Name + state/province/country

Sample SST QSO

K1RV: CQ SST K1RV



Could this activity cause interest in Field Day to decline? You be the judge!



The Back Page

Art Tolda explains “**Sidetone**” and “**Zero Beating**” for the CW Operator. See Page 1.

The **Carolina DX Foundation**, (CDXA) needs your help for when the sun shines “brightly”. See Page 3.

The **best laid plans** don’t always produce the desired result--especially in radio contesting! Follow the sag of Bill and Wayne. See Page 3.

Due to reduced club activity during the Covid-19 Pandemic, CDXA is changing its **dues structure** for membership renewals in 2021. New membership dues remains unchanged. See Page 4.

Wandering down the **paths of interest** in a pandemic. See Page 5.

Dennis Motschenbacher, K7BV will be missed as he steps aside at WWROF. See Page 7.

CWOps Club initiates **Slow Speed Test sessions** to help those interested in improving Morse Code skill get some good experience. See Page 7.

Wanted! A strong person to set up a **Field Day site atop the Blue Ridge**. Experience in canoe portages is beneficial. No experience required. See this page, above.